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Biological activity of oil-contaminated soil upon its salinization

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Abstract

Spills of brines from boring wells in oil fields adversely affect the soil systems up to the loss of their capacity for self-purification from hydrocarbon contamination. A single input of NaCl solution at a dose of 3% of the soil mass into the soddy-calcareous soil had no prolonged effects on the activity of the soil dehydrogenases, proteases, lipases, ureases, and the "respiration" of oil-polluted soil. In the first weeks, the salinization reduced the development of aerobic hydrocarbon-oxidizing microorganisms as compared to those in nonsaline oil-polluted soil. The efficiency of the soil self-purification from oil hydrocarbons in the saline (treated with NaCl) and nonsaline soils was 60 and 70%, respectively.